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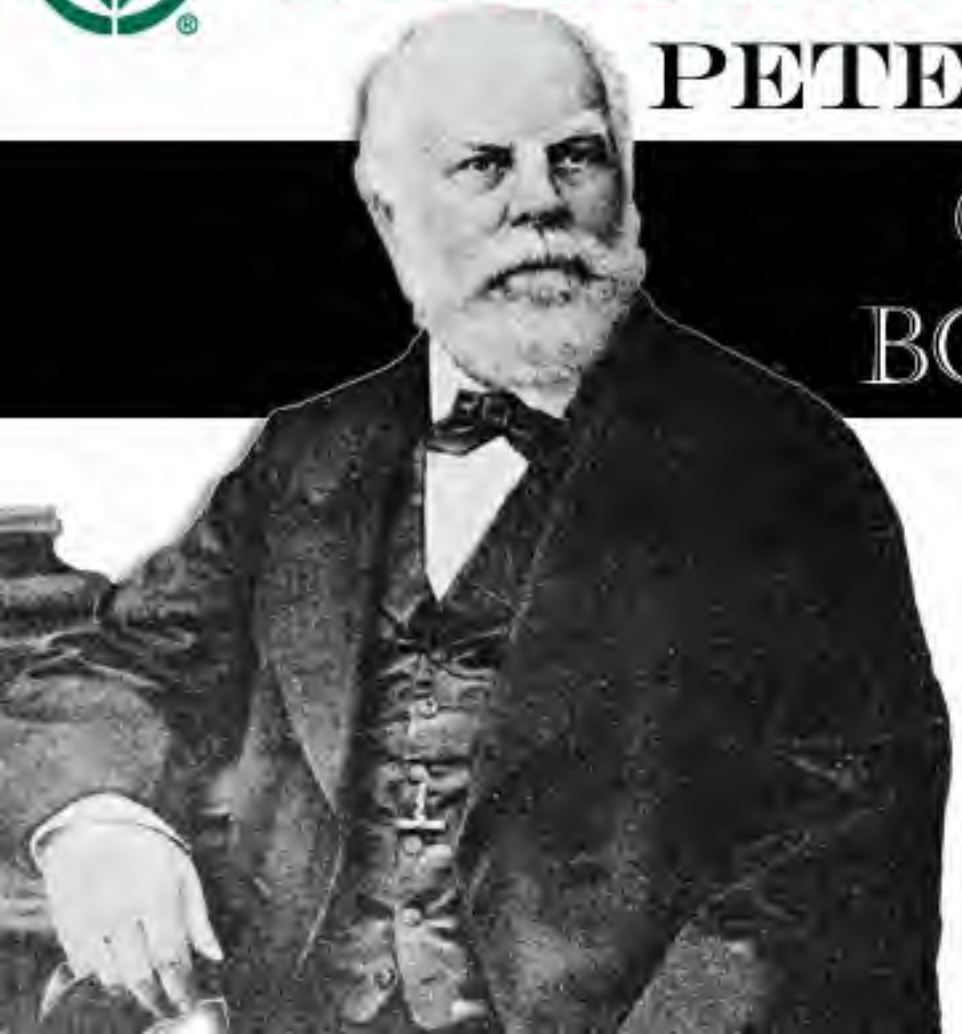

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17 tab. 44

P. ponderosa

145-164

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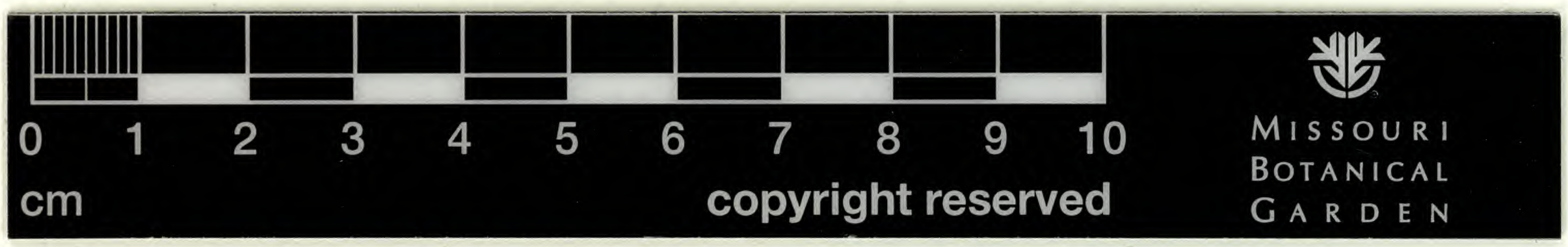


X415

Pinus ponderosa

Sept 11. 1863

March 2d 1847 Santa Fe Fendler N. 831

young, undeveloped ament & inflorescence 1 inch long —

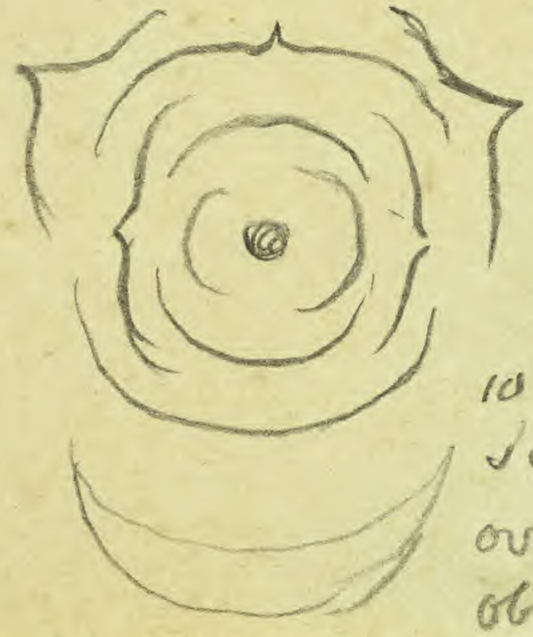
0.040

0.043

0.039

mean 0.041

0.037 — 0.044



10 involucral scales oval obtuse

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JONES & LEITCH
Druggists

Cor. Fifth & Market Sts. St. LOUIS, Mo.

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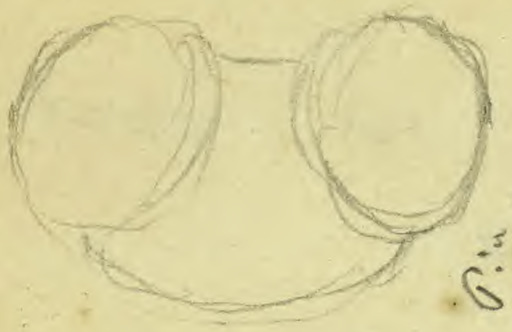
×415

Pinus ponderosa

Sept 12 1863

Santa Fe Dr Thos Conrad No 534

male amentes effete, female in full bloom July 5 1846



All of the Mexican & Pinus Ponderosa on the annuli of 2 similar ones namely belonging here but the 2

10 scales

×4

×10

Cones subterminal

over

few stamens just in full bloom, terminal

extends very short

11099

JONES & LEITCH

Druggists

Cor. Fifth & Market Sts. St. LOUIS, MO.

Shoot of with amount of 10 oval-
obtruler obtuse scales.

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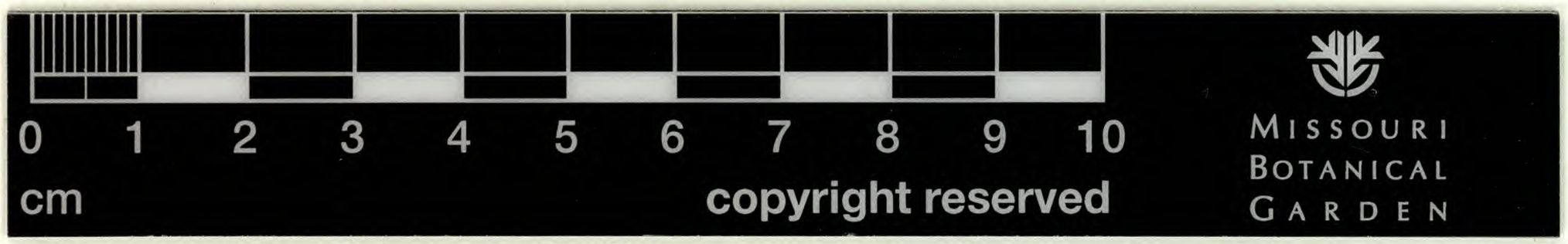


Pinus ponderosa

Sept 13 1863

Henry Engelmann June 21st 1859

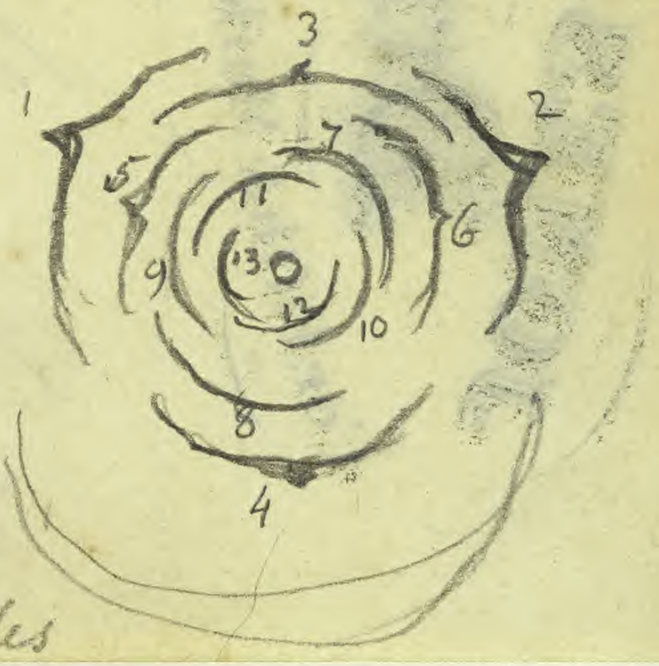
in full bloom Genoa, Nevada

‴ 0.043

‴ 0.026 — where does this belong to ?

Found among the Pollen of this specimen

anthers 2 inches long, patulous, curved upward



×10

‴ 0.041 — ‴ 0.044

mean 0.043

12-13 scales

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00111

Inv. of male and of 12 (-13)
Lecrecolate acute scales,
This the longer anent, smaller
cista of anthers and longer cones
seem to distinguish it from the
Santa Fe plant.
No affinity to P. rigida!
Fem. acute & cones sublanceol. etc

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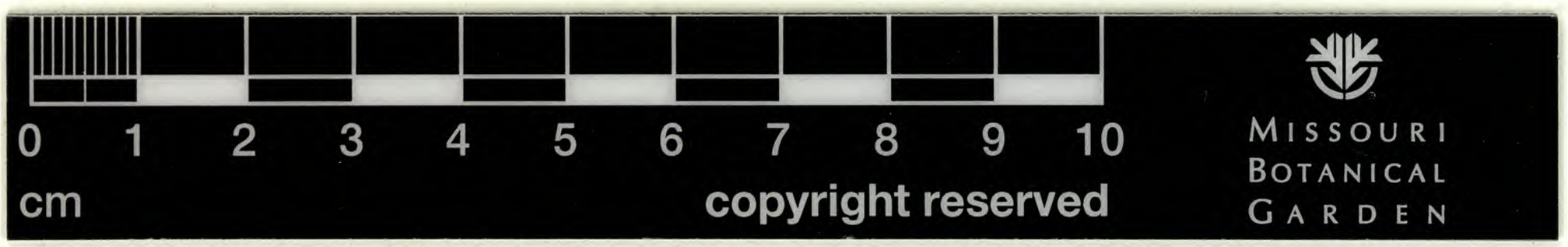
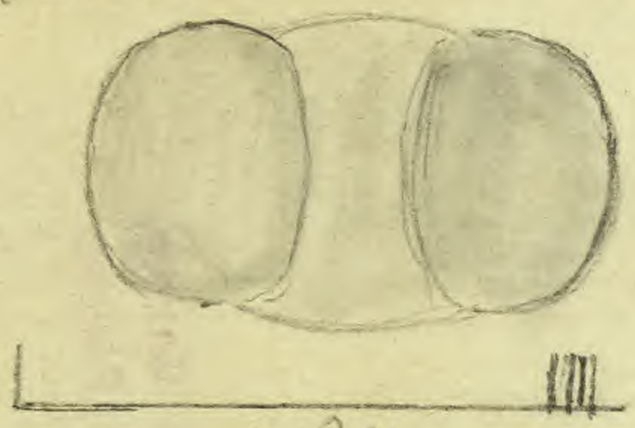


Pollen x 415

Pinus ponderosa ? March 9 1865

Bolander, California



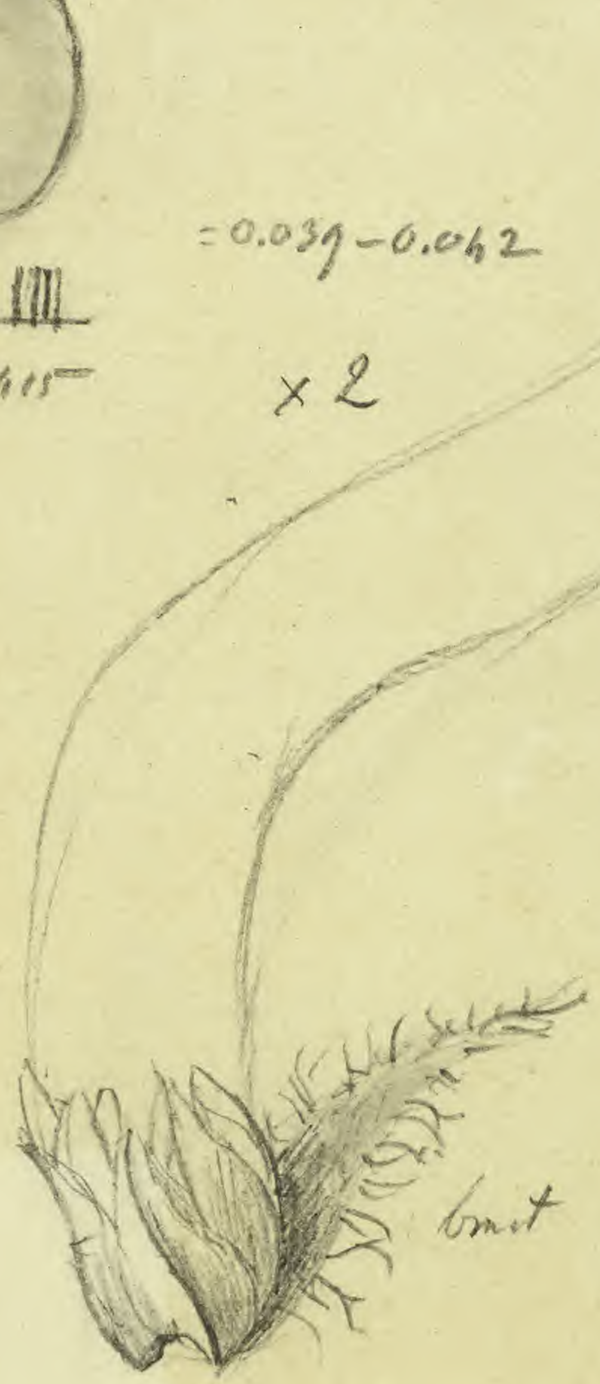
side of Pollen x 415

=0.039–0.042

x 2

10 pentagonal units

subequal in length .203



unit

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South-West Corner of Fifth and Market Streets.

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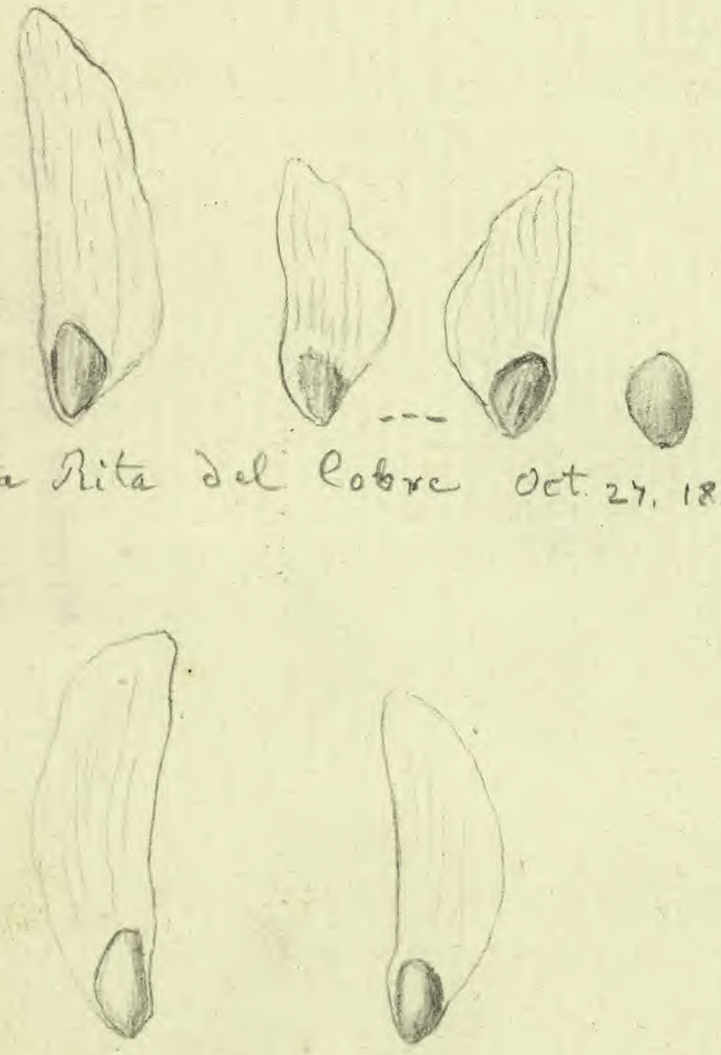
Sept 14 1863

Pinus ponderosa

Dr Bigelow. New Mexico 1851



Santa Rita del Cobre Oct. 27, 1851

X10

7 Cotyled.

in the only seed exam

Organ Mountains Nov. 15th 1851

HOTEL & RESTAURANT
"GARFIELD"
Corner Fifth and Market Streets, St. Louis, Mo.
JONES

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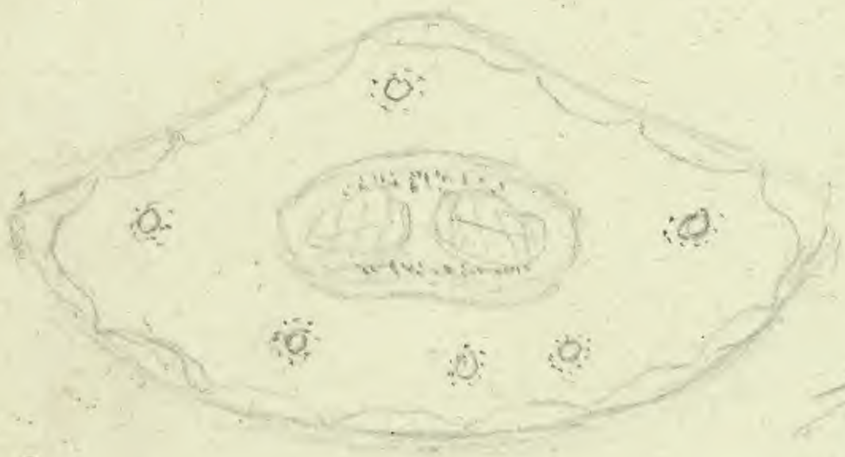
P. ponderosa

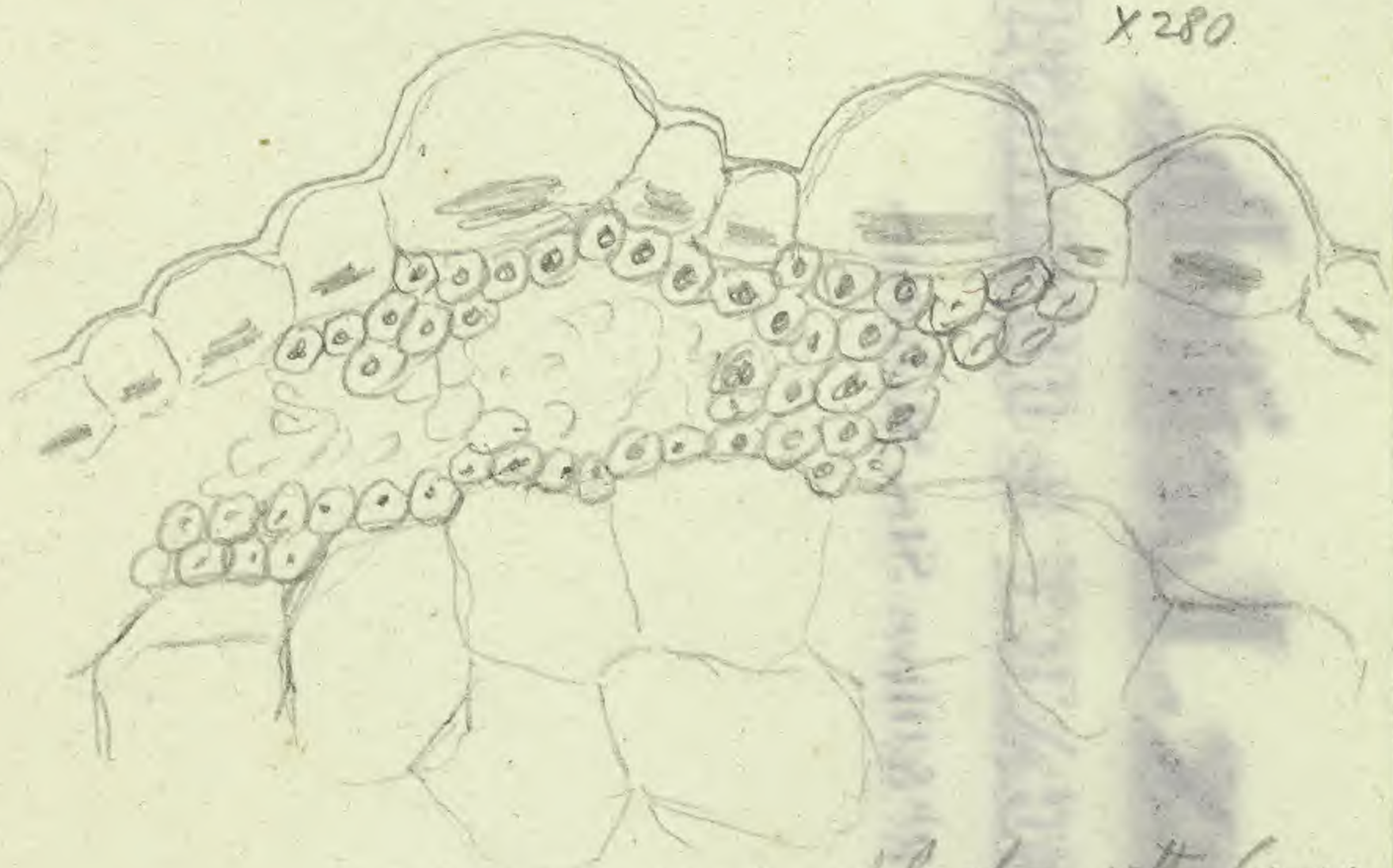
Feb 12 1876

Needlepine Rothrock 214, 1875 Mt Pikes Calif

x 30



x 280



upper casing of leaf, with large and prominent epidermis cells

one of the ducts x 280

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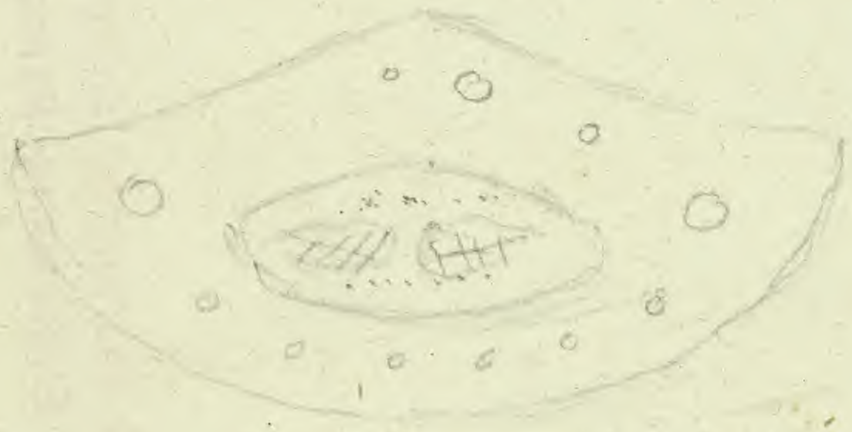
P. ponderosa
Nevada H. Engelmann

Feb 12 1876

x 30



x 150

one of the small accessory ducts below vessels.

epidermis x 150

hypodermis tissue much thinner than in other species of ponderosa

false bundles with three sheath above and below, vessels also much less than usual

x 30

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Pinus ponderosa
Colorado

March 11 1875

Canon City 5500' alt

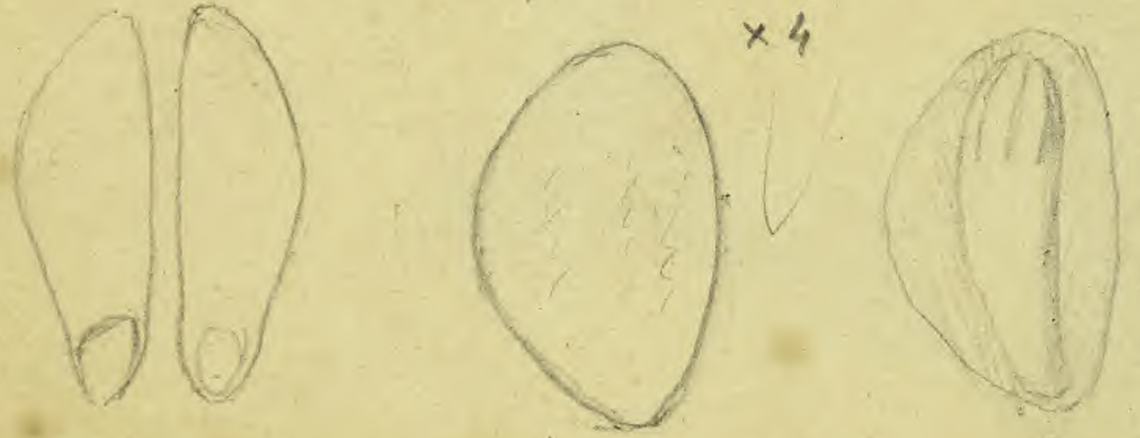
×4

8 Cotyledons

Seeds 2½ - 3½ lines long

Empire City 8500' alt.

×4



6-7 Cotyls usually 8 rarely 9 Cotyl at Empire

only traces of ribs

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PHARMACEUTIST,

No. 3005 Olive Street,

Near Garrison Avenue, **ST. LOUIS, MO.**

No. *Date,* *187*

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2½ - 10 - 41

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P. ponderosa

Colorado J.E 1874

Feb 12 1876

x30

all ponderosa leaves examined by me (Colorado – California) have strong heavy cells near the fibres bundles within the sheath

and the ducts parenchymatous and surrounded by thin walled cells

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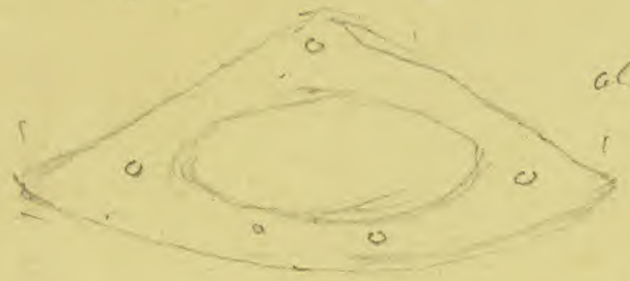
Rivus pendunus? (with Arenth) Feb 23 1878

MC Graham, Iris — 1874 Rollrock

x 30



old leaf

Ducts small but distinct

very leaf

Both ducts very indistinct

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GEO. UDE,

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Pinus ponderosa ?

June 8 1881

with 3 – 6 leaves, grove at
Top of Santa Rita Mtns, 8000' alt
C. G. Pringle, May 28
1881

× 30

leaves in 5's

Ducts all surrounded by strengthening cells

in bott 5 – 6 lines of stomata on back
and 3 or rarely 4 on the sides

leaves in 3's

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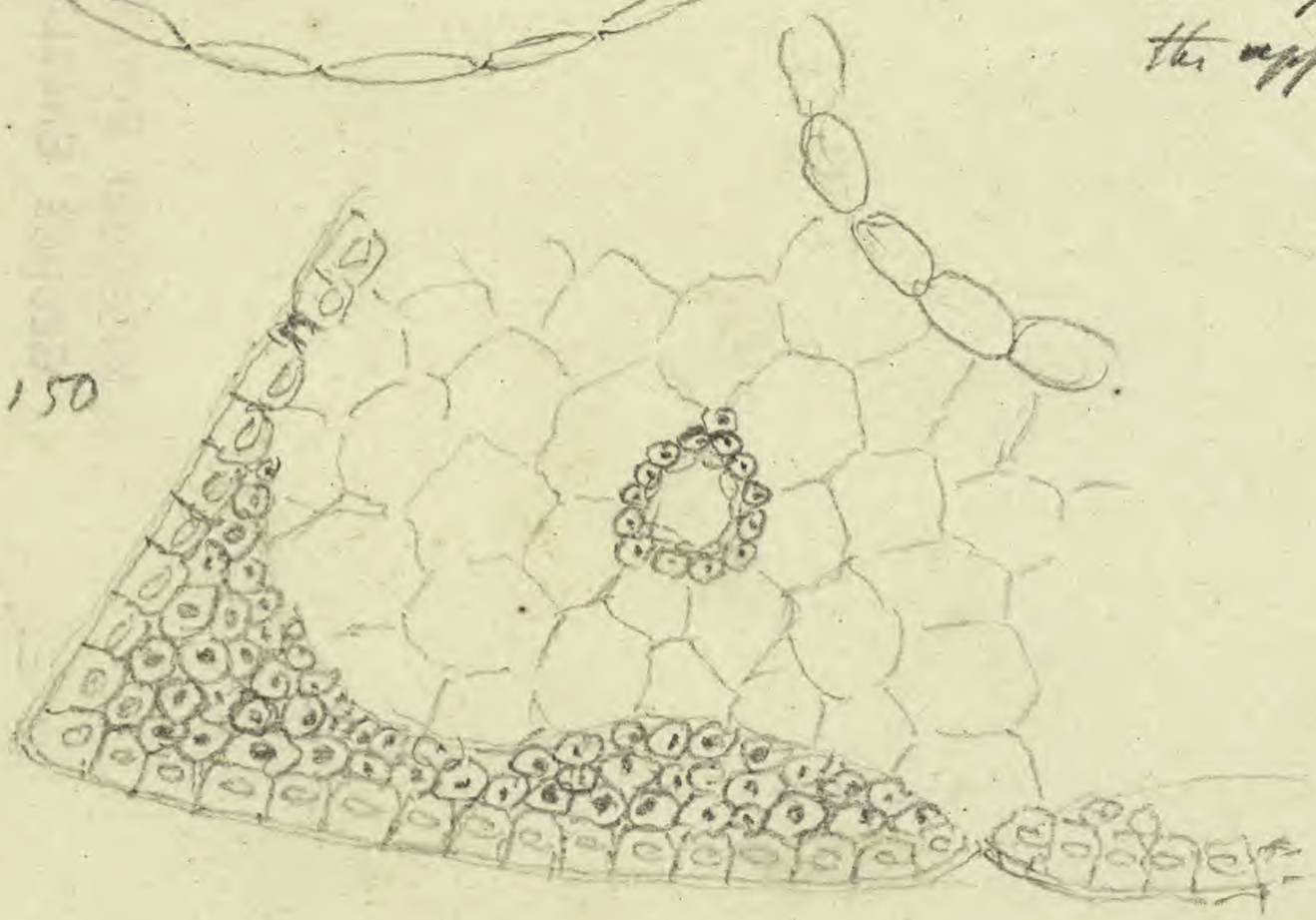
Pinus ponderosa ?
5-foliata
Santa Catarina Mtns, high up.
" leaves 2 to 6 or even 7"
J. G. Lemmon
April 1881

June 8 1881

× 30

The lower dust
always with strengthening cells
the upper one usually without
them.

× 150



6 leaves! × 30

Thinner leaf
strengthening cells indistinct.
perhaps *stricta* ?

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Pinus Torreyana Parry
San Diego, Parry 1850

Octo 17 1863

albumen

2 embryos with
13 & 1 with
14 Coty Led.

X 4

upper & outer side

inner & lower side

view of outer edge

inner edge

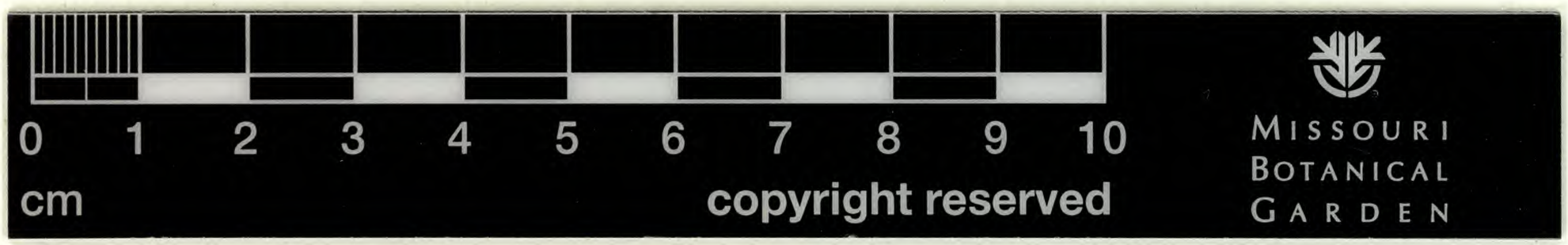
The Cone from which these seeds are taken is 4" long 3 1/2" & broad broad ovoid, obtuse, regular

Scales in 18/29 arrangt.

7 ↔ 11 Spirals most prominent

1/2 line X 30 = 15 lines Thickness of Shell X 30

17 lines



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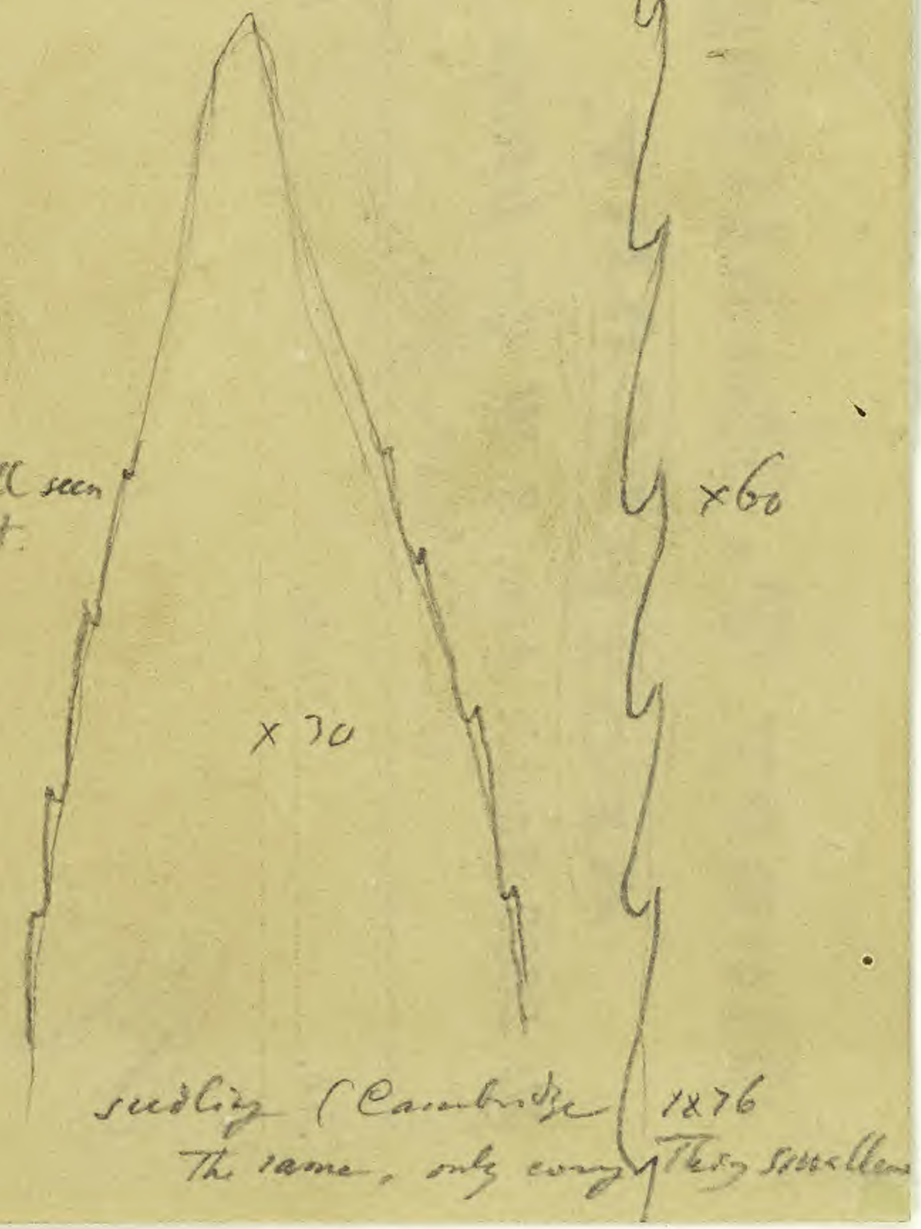
May 4 1872

Pinus Torreyana
S Parry

x 30



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Geo. Engelmann, M. D.,
No. 3003 Locust Street.

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Pinus macrophylla Lagl.
P. Engelmannii Carr.
Cos. gamiella
Trichocarpa

Nov 1862

size & shape of seed
after the impressions
in the scale

Cone 4–5 inches long
scales $\frac{13}{21}$ arrangement

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ALL THE NEW REMEDIES CONSTANTLY ON HAND

ALEX. LEITCH,

APOTHECARY & CHEMIST,

Cor. 4th and Olive Sts., St. Louis.

CHEMIST.

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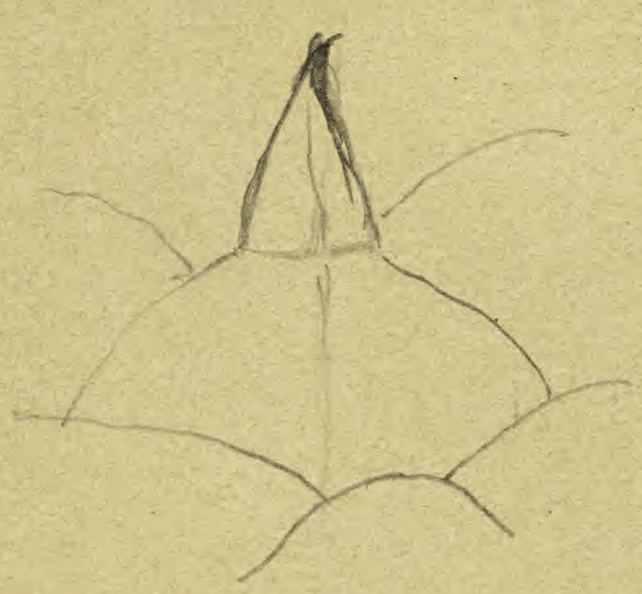
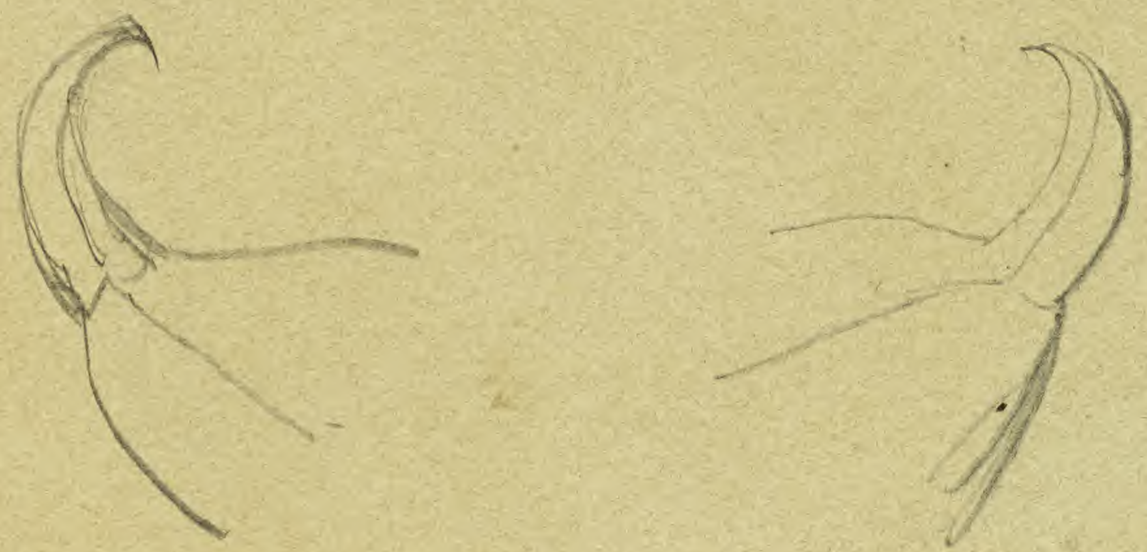
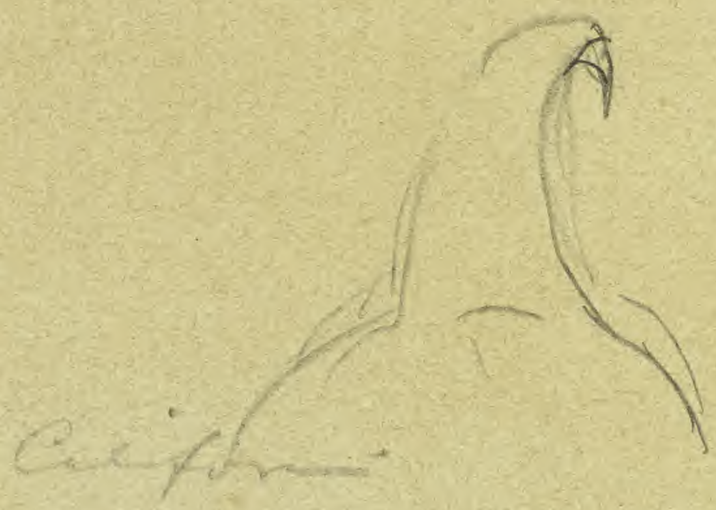
Illus. Kew. Sept 10 1869



1.

P. Maroonensis ? grown in Ceylon





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Pinus macrophylla Lagelm. April 1 1871

Cos. foliis trinatis, de Vriese 1846

x 30

x 30 x 60

x 30

seat of a ternate leaf

x 30

seat of quinate leaf

tip of ternate leaf

11114

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South West Corner Fifth and Market Streets

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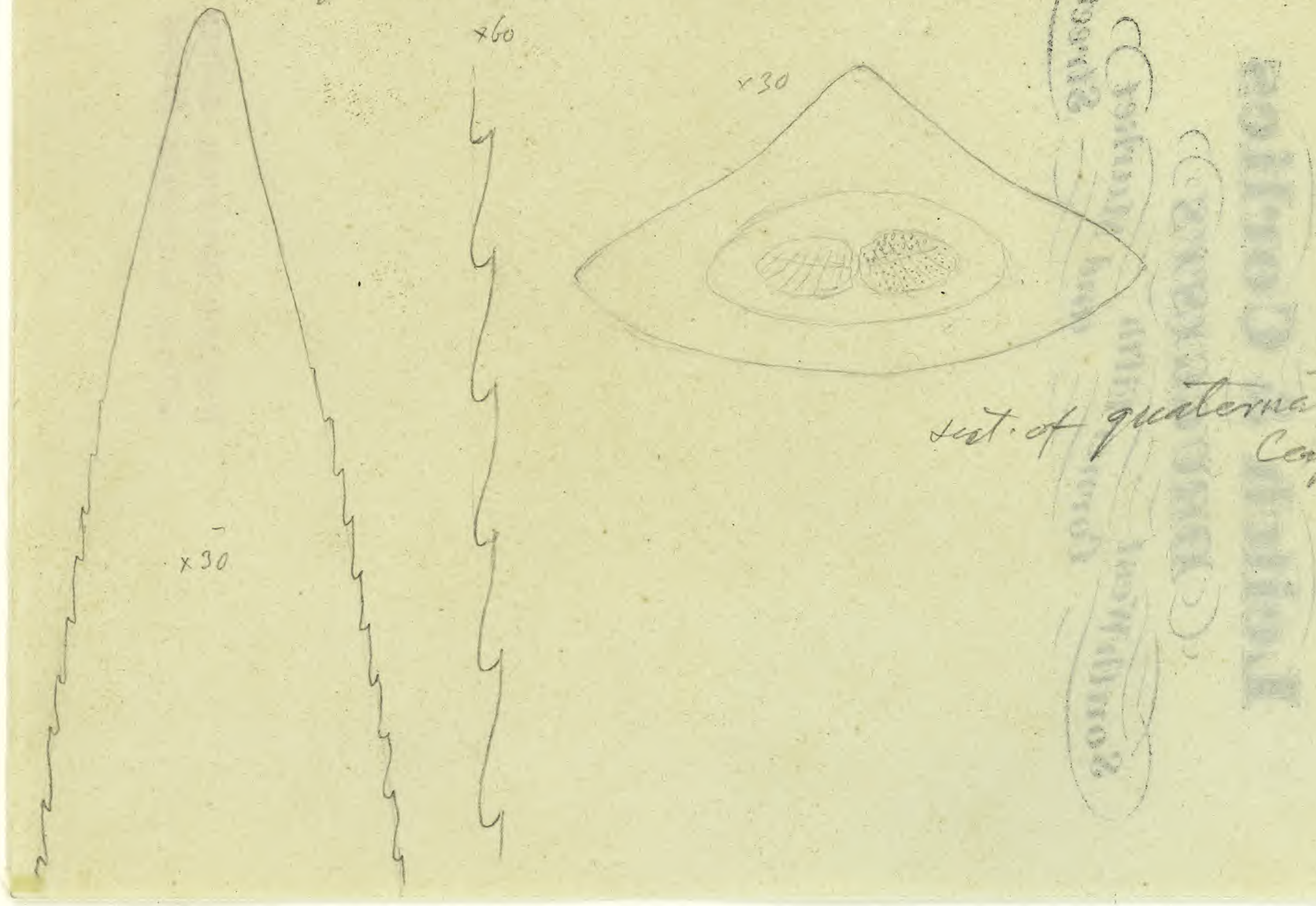
Pinus macrophylla Lagl

Apr 2? 1871

Cosiguiriachi, de Wilczeus 1846



Gray Herbarium Harvard University

Dist. of guatemala
Cof

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Pinus macrophylla Engelm
Wisliya leg

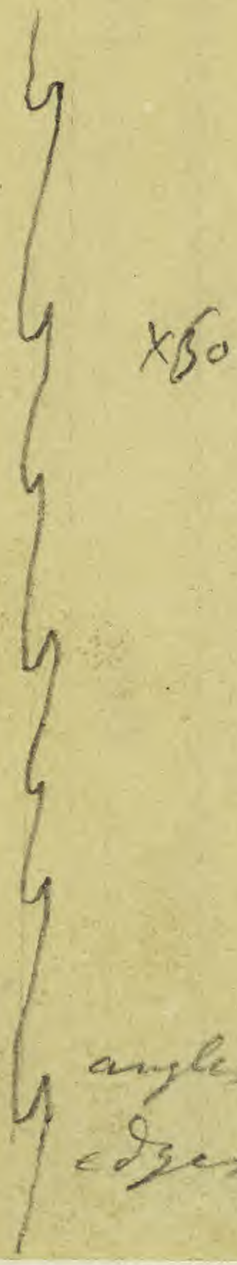
May 22 1878

Fornate × 30

Leaf 1.2 mm
broad

Leaf quinate
1 mm
1.5 wide

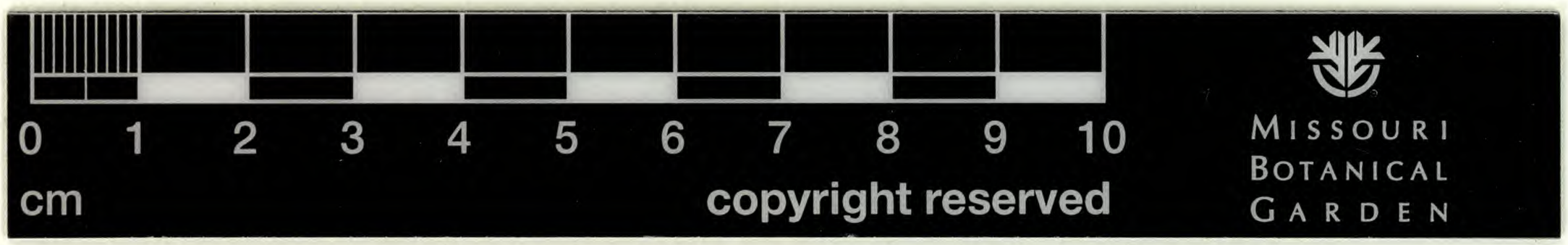
× 30



× 60

hypoderm cells strong on
numerous small bundles on
sheath - flux around ducts

angles, ducts in
edges, some within



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